

Pregnancy Test Further Reading

Further Reading

- The Citation Classic: Judith L. Vaitukaitis, Glenn D. Braunstein, Griff T. Ross, "A radioimmunoassay which specifically measures human chorionic gonadotropin in the presence of human luteinizing hormone," American Journal of Obstetrics and Gynecology 113:6, pp 751-758, July 15, 1972. (Citation Classic; Current Contents/Clinical Practice 11:24, 1983).
Abstract: With antiserum to the beta-subunit of human chorionic gonadotropin (hCG), we have developed a radioimmunoassay which selectively measures hCG in samples containing both human pituitary luteinizing hormone (HLH) and hCG. High HLH levels observed in samples obtained at the midcycle peak or from castrate patients do not cause significant inhibition in the specific hCG radioimmunoassay. The sensitivity of the assay is sufficient for distinguishing hCG from follicular and luteal phase HLH levels. This specific hCG radioimmunoassay is ideal for following serum hCG levels in patients undergoing chemotherapy for hCG-secreting tumors as well as for follow-up of patients after termination of molar pregnancies. In addition, the sensitivity of the assay will permit earlier diagnosis of pregnancy which, in turn, would permit earlier therapeutic intervention if desired.
- For more on the scientific basis for various urine pregnancy tests throughout human history, see J. Burstein and G.D. Braunstein, "Urine pregnancy tests from antiquity to the present," Early Pregnancy: Biology and Medicine 1 (1995) pp. 288-296. Several entries in the "Timeline of Pregnancy Tests" were based on this material.

A radioimmunoassay which specifically measures human chorionic gonadotropin in the presence of human luteinizing hormone

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With antiserum to the β -subunit of human chorionic gonadotropin (HCG), we have developed a radioimmunoassay which selectively measures HCG in samples containing both human pituitary luteinizing hormone (HLH) and HCG. High HLH levels observed in samples obtained at the midcycle peak or from castrate patients do not cause significant inhibition in the specific HCG radioimmunoassay. The sensitivity of the assay is sufficient for distinguishing HCG from follicular and luteal phase HLH levels. This specific HCG radioimmunoassay is ideal for following serum HCG levels in patients undergoing chemotherapy for HCG-secreting tumors as well as for follow-up of patients after termination of molar pregnancies. In addition, the sensitivity of the assay will permit earlier diagnosis of pregnancy which, in turn, would permit earlier therapeutic intervention if desired.

ANTISERA generated to the β -subunit of human chorionic gonadotropin (HCG) discriminate between human pituitary luteinizing hormone (HLH) and HCG,^{1,2} while most of those produced following immunization with intact hormone do not. One of these sera produced following a single immunizing dose of 50 μ g of the β -subunit of HCG was used to develop a radioimmunoassay which specifically measures HCG in plasma samples containing both HLH and HCG. The development of that radioimmunoassay and some applications which re-

flect the potential clinical usefulness of the specific HCG assay are discussed herein.

Material and methods

Antigens. Highly purified HCG (Rouswell) and the β -subunit of HCG (CR-100 β) were prepared by Drs. Robert Casfield and Francis Morgan.³ The highly purified HCG preparation was bioassayed by the ventral prostate weight assay^{4,5} and immunoassayed by a double-antibody-immunoassay procedure outlined below. The Second International Standard for HCG, generously provided by Dr. Derek Bangham (World Health Organization), served as reference preparation for these assays. Highly purified human pituitary hormones—HLH (LER 960 and LER 1417), human pituitary follicle-stimulating hormone (HFSH) (LER 1566), and HTSH (human thyrotropin, Pierce Fraction 4), and a cruder extract, LER 907, containing both HFSH and HLH—were provided by the National Pituitary

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Vaitukaitis, Braunstein, and Ross' paper on the hCG radioimmunoassay, 1972.

[Read the Citation Classic \(PDF, 877KB\)](#)

- More information on the history of research on female reproductive hormones can be found in Vern Bullough, *Science in the Bedroom: A History of Sex Research*, Basic Books, 1994. See especially pp. 126-132. See also Ann Rudinow Saetnan, Nelly Oudshoorn, and Marta Kirejczyk, eds., *Bodies of Technology: Women's Involvement with Reproductive Medicine*, Ohio State University Press, 2000.
- For more on the medical profession's increased "efforts to establish itself as the source of maternity care for the middle class," see the entry on Pregnancy Testing in Barbara Katz Rothman, ed. *The Encyclopedia of Childbearing*. Holt & Co., 1993, pp. 327-328.
- On medical tests see: Trevor Pinch, "Testing—1,2,3 Testing: Toward a Sociology of Testing." *Science, Technology and Human Values* (Winter, 1993) pp. 25-41.
- A description of the testing that led to FDA approval of the first home pregnancy tests can be found in: "Home Pregnancy Test Simple to Use, Reasonably Accurate, Especially if Result is Positive," *Family Planning Perspectives* 11:3 (May/June 1979) pp. 190-191.
- The Power House Museum of Australia features an online exhibit on the history and material culture of menstruation at: <http://www.powerhousemuseum.com/rags/>
- Many popular women's magazines have featured articles about women's relationships with OB/GYNs and pregnancy testing in the past few decades. See for example:
 - Joann Ellison Rodgers, "Who's Running the Show—Gynecologists or Patients?" *Mademoiselle* (November 1978), pp. 74-75.
 - Joel Gurin, "Home Medical Tests: What Works, What Doesn't, What's Right for You." *Glamour* (September 1988), pp. 142-145.
 - Cynthia Hacinli, "All Pregnancy Tests are Not Equal," *Mademoiselle*, (March 1989), p.142.

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